

5/9/5

009933896    \*\*Image available\*\*

WPI Acc No: 1994-201608/199425

XRPX Acc No: N94-158610

Braking of articulated vehicle with approximately optimal stability - involves equalisation of measured and desired values of horizontal component of coupling force in accordance with deceleration

Patent Assignee: WABCO STANDARD GMBH (WESA )

Inventor: FRANK D; SCHAPPLER H; STENDER A; WITTE N

Number of Countries: 008 Number of Patents: 007

Patent Family:

Patent No	Kind	Date	Applicat No	Kind	Date	Week
EP 603493	A2	19940629	EP 93117205	A	19931023	199425 B
DE 4243245✓	A1	19940623	DE 4243245	A	19921219	199426
BR 9304855	A	19940621	BR 934855	A	19931126	199428
US 5403073	A	19950404	US 93169577	A	19931217	199519
EP 603493	A3	19950426	EP 93117205	A	19931023	199545
EP 603493	B1	19970326	EP 93117205	A	19931023	199717
DE 59305956	G	19970430	DE 505956	A	19931023	199723
			EP 93117205	A	19931023	

Priority Applications (No Type Date): DE 4243245 A 19921219

Cited Patents: No-SR.Pub; DE 4003316; DE 4035805; EP 374484

Patent Details:

Patent No Kind Lan Pg Main IPC Filing Notes

EP 603493 A2 G 15 B60T-008/00

Designated States (Regional): DE FR GB IT NL SE

DE 4243245 A1 13 B60T-008/00

US 5403073 A 8 B60T-013/00

EP 603493 B1 G 18 B60T-007/20

Designated States (Regional): DE FR GB IT NL SE

DE 59305956 G B60T-007/20 Based on patent EP 603493

BR 9304855 A B60T-008/60

EP 603493 A3 B60T-008/00

Abstract (Basic): EP 603493 A

The towing vehicle (4) having two axles (1,2) is coupled (5) to its single-axle trailer (6). A desired value of horizontal braking force at the coupling is worked out from measurements of the vertical component (Fvist) and deceleration. The supply of energy to the brakes is adjusted so that the actual horizontal component of braking (Fhist) is matched to the desired value. Alternatively the ratio of horizontal and vertical components may be equalised to that of measured deceleration to the acceleration due to gravity (g).

USE/ADVANTAGE - Pref. on tractor-and-trailer combinations in road traffic, directional stability is optimised with the braking force (B) on each wheel proportional to its load.

Dwg.1/4

Abstract (Equivalent): EP 603493 B

Method for braking a vehicle combination consisting of at least two individual vehicles (4,6) in which at least one individual vehicle (6) is supported by a supporting individual vehicle (4) and the individual vehicles comprise on each axle group (1, 2, 3) at least one brake (28, 30, 20) that is actuated by the supply of energy, having the following steps during brake actuation: a) the ratio (Fhact/Fvact) of the actual horizontal component (Fhact) to the actual vertical component (Fvact)

of the force (Fact) acting between the individual vehicles (4, 6) and the ratio (b/g) of the actual vehicle combination deceleration (b) to the acceleration due to gravity (g) are determined: b) the value of the energy supplied to the brake or brakes (28, 30, 20) of at least one individual vehicle (4, 6) is so adjusted that the said ratios (F<sub>hact</sub>/F<sub>vact</sub>) and (n/g) are brought into line with one another, characterised in that the ratio (F<sub>hact</sub>/F<sub>vact</sub>) of the actual horizontal component (F<sub>hact</sub>) to the actual vertical component (F<sub>vact</sub>) is determined by means of components (F<sub>meas1</sub>, F<sub>meas2</sub>) of the force (Fact) acting between the individual vehicles (4, 6) in directions that are inclined to the vertical and/or to the horizontal by an angle ( $\gamma$ ,  $\alpha$ , respectively).

Dwg.1/4

Abstract (Equivalent): US 5403073 A

The brakes are actuated by supplying them with energy. A horizontal actual-value component and a vertical actual-value component of a force acting between the vehicles are determined.

An actual-value vehicle train deceleration is determined, also a horizontal desired-value component from the vertical actual-value component and the actual-value vehicle train deceleration. The energy supplied to the brakes of at least one of the vehicles is adjusted so that the horizontal actual-value component becomes equal to the horizontal desired-value component.

USE - For braking a vehicle train which comprises at least one supporting vehicle having at least one axle group and at least one supported vehicle having at least one axle group and supported by the supporting vehicle.

Dwg.1/4

Title Terms: BRAKE; ARTICULATE; VEHICLE; APPROXIMATE; OPTIMUM; STABILISED; EQUAL; MEASURE; VALUE; HORIZONTAL; COMPONENT; COUPLE; FORCE; ACCORD; DECELERATE

Derwent Class: Q18; X22

International Patent Class (Main): B60T-007/20; B60T-008/00; B60T-008/60;  
B60T-013/00

International Patent Class (Additional): B60T-008/24; B60T-008/26;  
B60T-013/66

File Segment: EPI; EngPI

Manual Codes (EPI/S-X): X22-C; X22-P05